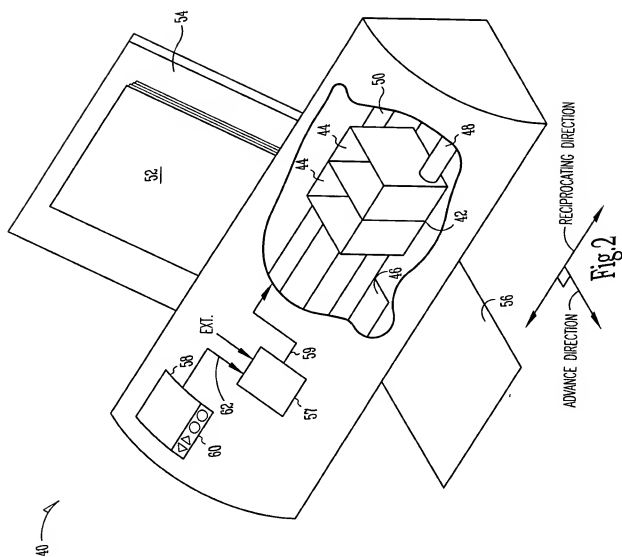


Fig. 1





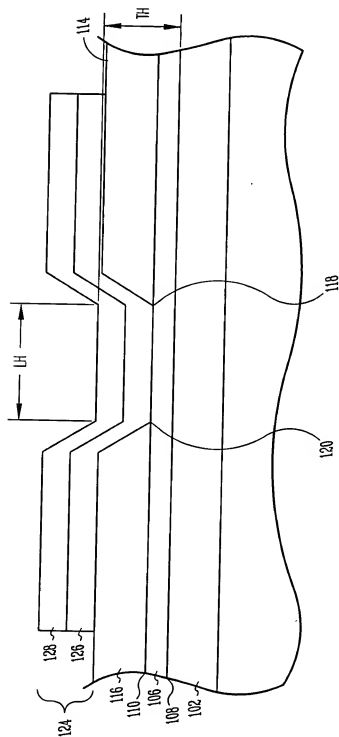
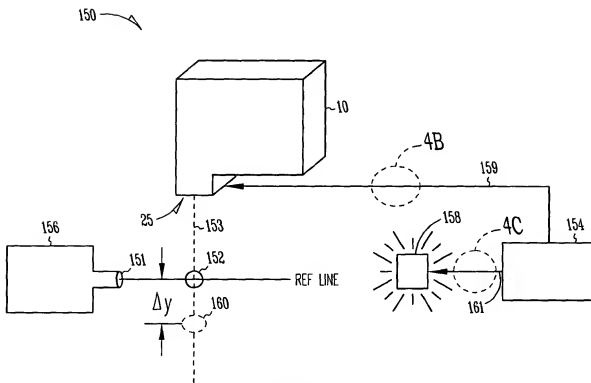


Fig.3B



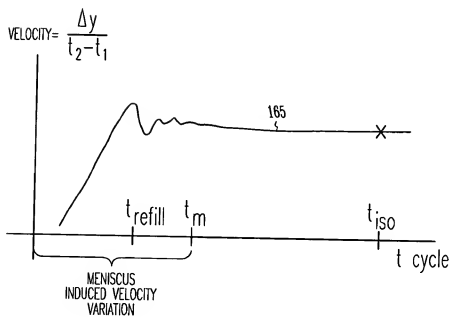


Fig.5A

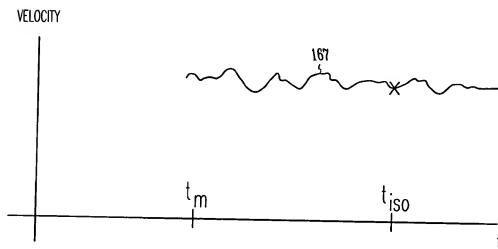


Fig.5B

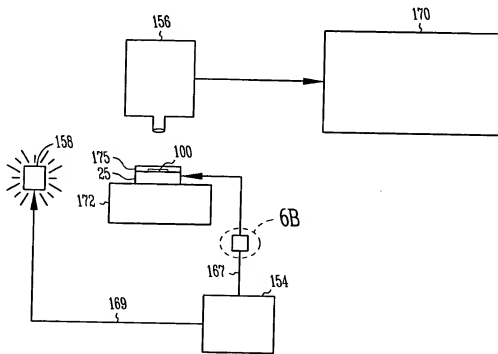


Fig. 6A

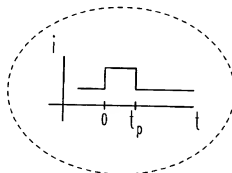


Fig. 6B

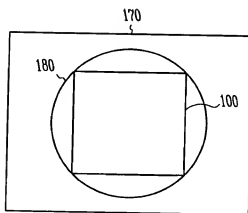


Fig. 7A

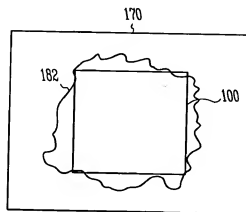


Fig. 7B

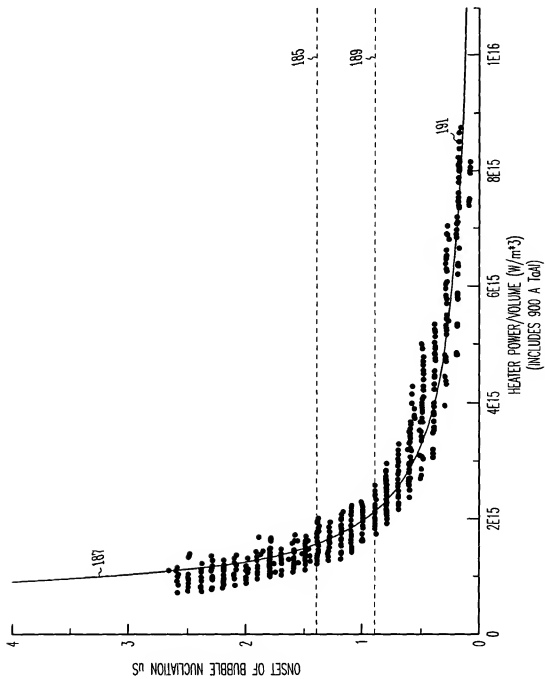


Fig.8

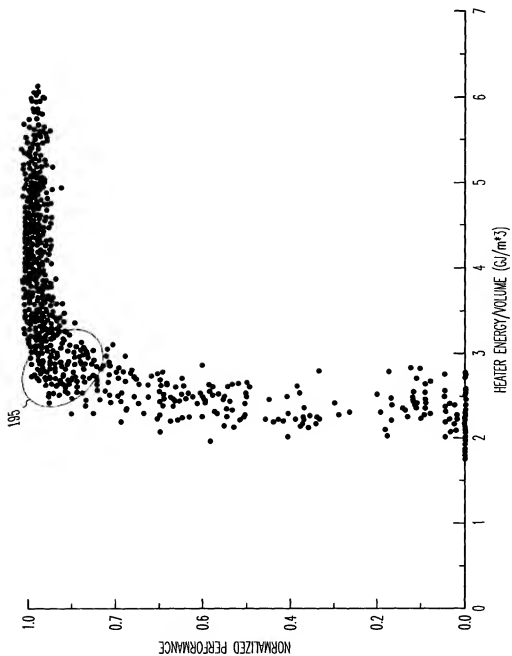


Fig.9

ENERGY RANGE (μ JOULES) REQUIRED FOR STABLE JETTING PERFORMANCE								
HEATER AREA (μm^2)	HEATER THICKNESS, TH, (ANGSTROMS)							
	1000	2000	3000	4000	5000	6000	7000	8000
50	0.01-0.02	0.03-0.04	0.04-0.06	0.06-0.08	0.07-1.10	0.09-0.12	0.10-0.14	0.12-0.16
100	0.03-0.04	0.06-0.08	0.09-0.12	0.12-0.16	0.15-0.20	0.18-0.24	0.21-0.28	0.24-0.32
150	0.04-0.06	0.09-0.12	0.13-0.18	0.18-0.24	0.22-0.30	0.26-0.36	0.31-0.42	0.35-0.48
200	0.06-0.08	0.12-0.16	0.18-0.24	0.24-0.32	0.29-0.4	0.35-0.48	0.41-0.56	0.47-0.64
250	0.07-0.1	0.15-0.2	0.22-0.3	0.29-0.4	0.37-0.5	0.44-0.6	0.51-0.69	0.59-0.79
300	0.09-0.12	0.18-0.24	0.26-0.36	0.35-0.48	0.44-0.6	0.53-0.71	0.62-0.83	0.71-0.95
350	0.1-0.14	0.21-0.28	0.31-0.42	0.41-0.56	0.51-0.69	0.62-0.83	0.72-0.97	0.82-1.11
400	0.12-0.16	0.24-0.32	0.35-0.48	0.47-0.64	0.59-0.79	0.71-0.95	0.82-1.11	0.94-1.27
450	0.13-0.18	0.26-0.36	0.4-0.54	0.53-0.71	0.66-0.89	0.79-1.07	0.93-1.25	1.06-1.43
500	0.15-0.2	0.29-0.4	0.44-0.6	0.59-0.78	0.74-0.99	0.88-1.19	1.03-1.39	1.18-1.59
550	0.16-0.22	0.32-0.44	0.49-0.66	0.65-0.87	0.81-1.09	0.97-1.31	1.13-1.53	1.29-1.75
600	0.18-0.24	0.35-0.48	0.53-0.71	0.71-0.95	0.88-1.19	1.06-1.43	1.23-1.67	1.41-1.91
650	0.19-0.26	0.38-0.52	0.57-0.77	0.76-1.06	0.96-1.29	1.15-1.55	1.34-1.81	1.53-2.06
700	0.21-0.28	0.41-0.56	0.62-0.83	0.82-1.11	1.03-1.39	1.23-1.67	1.44-1.95	1.65-2.22
750	0.22-0.3	0.44-0.6	0.66-0.89	0.88-1.19	1.1-1.49	1.32-1.79	1.54-2.08	1.76-2.38
800	0.24-0.32	0.47-0.64	0.71-0.95	0.94-1.27	1.18-1.59	1.41-1.91	1.65-2.22	1.88-2.54
850	0.25-0.34	0.5-0.67	0.75-1.01	1.0-1.35	1.25-1.69	1.5-2.02	1.75-2.36	2.0-2.7
900	0.26-0.36	0.53-0.71	0.79-1.07	1.06-1.43	1.32-1.79	1.59-2.14	1.85-2.5	2.12-2.86
950	0.28-0.38	0.56-0.75	0.84-1.13	1.12-1.51	1.4-1.89	1.68-2.26	1.96-2.64	2.23-3.02
1000	0.29-0.4	0.59-0.79	0.88-1.19	1.18-1.59	1.47-1.99	1.76-2.38	2.06-2.78	2.35-3.18
1050	0.31-0.42	0.62-0.83	0.93-1.25	1.23-1.67	1.54-2.08	1.85-2.5	2.16-2.92	2.47-3.33
1100	0.32-0.44	0.65-0.87	0.97-1.31	1.29-1.75	1.62-2.18	1.94-2.62	2.26-3.06	2.59-3.49
1200	0.35-0.48	0.71-0.95	1.06-1.43	1.41-1.91	1.76-2.38	2.12-2.86	2.47-3.33	2.82-3.81
1300	0.38-0.52	0.76-1.03	1.15-1.55	1.53-2.06	1.91-2.58	2.29-3.1	2.68-3.61	3.06-4.13
1400	0.41-0.56	0.82-1.11	1.23-1.67	1.65-2.22	2.06-2.78	2.47-3.33	2.88-3.89	3.29-4.45
1500	0.44-0.6	0.88-1.19	1.32-1.79	1.76-2.38	2.21-2.98	2.65-3.57	3.09-4.17	3.53-4.76
2000	0.59-0.79	1.18-1.59	1.76-2.38	2.35-3.18	2.94-3.97	3.53-4.76	4.12-5.56	4.7-6.35
2500	0.74-0.99	1.47-1.99	2.21-2.98	2.94-3.97	3.68-4.96	4.41-5.96	5.15-6.95	5.88-7.94
3000	0.88-1.19	1.76-2.38	2.65-3.57	3.53-4.76	4.41-5.96	5.29-7.15	6.17-8.34	7.06-9.53
3500	1.03-1.39	2.06-2.78	3.09-4.17	4.12-5.56	5.15-6.95	6.17-8.34	7.2-9.73	8.23-11.1
4000	1.18-1.59	2.35-3.18	3.53-4.76	4.7-6.35	5.88-7.94	7.06-9.53	8.23-11.1	9.41-12.7

Fig.10

HEATER AREA (μm^2)	ENERGY RANGE (μJOULES) REQUIRED FOR STABLE JETTING PERFORMANCE							
	HEATER THICKNESS, TH, (ANGSTROMS)							
	9000	10000	11000	12000	13000	14000	15000	16000
50	0.13-0.18	0.15-0.20	0.16-0.22	0.18-0.24	0.19-0.26	0.21-0.30	0.22-0.30	0.24-0.32
100	0.26-0.36	0.29-0.40	0.32-0.44	0.35-0.48	0.38-0.48	0.38-0.52	0.44-0.60	0.47-0.64
150	0.40-0.54	0.44-0.60	0.49-0.66	0.53-0.71	0.57-0.77	0.62-0.83	0.66-0.89	0.71-0.95
200	0.53-0.71	0.59-0.79	0.65-0.87	0.71-0.95	0.76-1.03	0.82-1.11	0.88-1.19	0.94-1.27
250	0.66-0.89	0.74-0.99	0.81-1.09	0.88-1.19	0.96-1.29	1.03-1.39	1.1-1.49	1.18-1.59
300	0.79-1.07	0.88-1.19	0.97-1.31	1.06-1.43	1.15-1.55	1.23-1.67	1.32-1.79	1.41-1.91
350	0.93-1.25	1.03-1.39	1.13-1.53	1.23-1.67	1.34-1.81	1.44-1.95	1.54-2.08	1.65-2.22
400	1.06-1.43	1.18-1.59	1.29-1.75	1.41-1.91	1.53-2.06	1.65-2.22	1.76-2.38	1.88-2.54
450	1.19-1.61	1.32-1.79	1.46-1.97	1.59-2.14	1.72-2.32	1.85-2.5	1.98-2.68	2.12-2.86
500	1.32-1.79	1.47-1.99	1.62-2.18	1.76-2.38	1.91-2.58	2.06-2.78	2.21-2.98	2.35-3.18
550	1.46-1.97	1.62-2.18	1.78-2.4	1.94-2.62	2.1-2.84	2.26-3.06	2.43-3.28	2.59-3.49
600	1.59-2.14	1.76-2.38	1.94-2.62	2.12-2.86	2.29-3.1	2.47-3.33	2.65-3.57	2.82-3.81
650	1.72-2.32	1.91-2.58	2.1-2.84	2.29-3.1	2.48-3.35	2.68-3.61	2.87-3.87	3.06-4.13
700	1.85-2.5	2.06-2.78	2.26-3.06	2.47-3.33	2.68-3.61	2.88-3.89	3.09-4.17	3.29-4.45
750	1.98-2.68	2.21-2.98	2.43-3.28	2.65-3.57	2.87-3.87	3.09-4.17	3.31-4.47	3.53-4.76
800	2.12-2.86	2.35-3.18	2.59-3.49	2.82-3.81	3.06-4.13	3.29-4.45	3.53-4.76	3.76-5.08
850	2.25-3.04	2.5-3.37	2.75-3.71	3.0-4.05	3.25-4.39	3.5-4.72	3.75-5.06	4.0-5.4
900	2.38-3.22	2.65-3.57	2.91-3.93	3.18-4.29	3.44-4.64	3.7-5	3.97-5.36	4.23-5.72
950	2.51-3.39	2.79-3.77	3.07-4.15	3.35-4.53	3.63-4.9	3.91-5.28	4.19-5.66	4.47-6.03
1000	2.65-3.57	2.94-3.97	3.23-4.37	3.53-4.76	3.82-5.16	4.12-5.56	4.41-5.96	4.7-6.35
1050	2.78-3.75	3.09-4.17	3.4-4.59	3.7-5.0	4.01-5.42	4.32-5.84	4.63-6.25	4.94-6.67
1100	2.91-3.93	3.23-4.37	3.56-4.8	3.88-5.24	4.2-5.68	4.53-6.11	4.85-6.53	5.17-6.99
1200	3.18-4.29	3.53-4.76	3.88-5.24	4.23-5.72	4.59-6.19	4.94-6.67	5.29-7.15	5.64-7.62
1300	3.44-4.64	3.82-5.16	4.2-5.68	4.59-6.19	4.97-6.71	5.35-7.23	5.73-7.74	6.12-8.26
1400	3.7-5.0	4.12-5.56	4.53-6.11	4.94-6.67	5.35-7.23	5.76-7.78	6.17-8.34	6.59-8.89
1500	3.97-5.36	4.41-5.96	4.85-6.55	5.29-7.15	5.73-7.74	6.17-8.34	6.61-8.93	7.06-9.53
2000	5.29-7.15	5.88-7.94	6.47-8.73	7.06-9.53	7.64-10.3	8.23-11.1	8.82-11.9	9.41-12.7
2500	6.62-8.93	7.35-9.93	8.1-10.9	8.82-11.9	9.6-12.9	10.3-13.9	11.0-14.9	11.8-15.9
3000	7.94-10.7	8.82-11.9	9.7-13.1	10.6-14.3	11.5-15.5	12.4-16.7	13.2-17.9	14.1-19.1
3500	9.3-12.5	10.3-13.9	11.3-15.3	12.4-16.7	13.4-18.1	14.4-19.5	15.4-20.8	16.5-22.2
4000	10.6-14.3	11.8-15.9	12.9-17.5	14.1-19.1	15.3-20.6	16.5-22.2	17.6-23.8	18.8-25.4

Fig.11

ENERGY RANGE (μ JOULES) REQUIRED FOR STABLE JETTING PERFORMANCE	
HEATER AREA (μm^2)	HEATER THICKNESS, TH, (ANGSTROMS)
	500
50	0.007-0.01
100	0.01-0.02
150	0.02-0.03
200	0.03-0.04
250	0.04-0.05
300	0.04-0.06
350	0.05-0.07
400	0.06-0.08
450	0.07-0.09
500	0.07-0.10
550	0.08-0.11
600	0.09-0.12
650	0.10-0.13
700	0.10-0.14
750	0.11-0.15
800	0.12-0.16
850	0.12-0.17
900	0.13-0.18
950	0.14-0.19
1000	0.15-0.20
1050	0.15-0.21
1100	0.16-0.22
1200	0.18-0.24
1300	0.19-0.26
1400	0.20-0.27
1500	0.22-0.30
2000	0.29-0.40
2500	0.37-0.50
3000	0.44-0.60
3500	0.51-0.69
4000	0.59-0.79

Fig.12